

SLOVENSKI STANDARD

SIST EN IEC 61010-2-051:2021

01-december-2021

Nadomešča:

SIST EN 61010-2-051:2015

Varnostne zahteve za električno opremo za meritve, nadzor in laboratorijsko uporabo - 2-051. del: Posebne zahteve za laboratorijsko opremo za mešanje in premešavanje (IEC 61010-2-051:2018)

Safety requirements for electrical equipment for measurement, control and laboratory use - Part 2-051: Particular requirements for laboratory equipment for mixing and stirring (IEC 61010-2-051:2018)

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Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2-051: Besondere Anforderungen an Laborgeräte zum Mischen und Rühren (IEC 61010-2-051:2018)

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Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 2-051 : Exigences particulières pour appareils de laboratoire utilisés pour mélanger et agiter (IEC 61010-2-051:2018)

Ta slovenski standard je istoveten z: EN IEC 61010-2-051:2021

ICS:

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
71.040.10	Kemijski laboratoriji. Laboratorijska oprema	Chemical laboratories. Laboratory equipment

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EUROPEAN STANDARD

EN IEC 61010-2-051

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2021

ICS 19.080; 71.040.20

Supersedes EN 61010-2-051:2015 and all of its
amendments and corrigenda (if any)

English Version

Safety requirements for electrical equipment for measurement,
control and laboratory use - Part 2-051: Particular requirements
for laboratory equipment for mixing and stirring
(IEC 61010-2-051:2018)

Exigences de sécurité pour appareils électriques de
mesurage, de régulation et de laboratoire - Partie 2-051 :
Exigences particulières pour appareils de laboratoire
utilisés pour mélanger et agiter
(IEC 61010-2-051:2018)

Sicherheitsbestimmungen für elektrische Mess-, Steuer-,
Regel- und Laborgeräte -Teil 2-051: Besondere
Anforderungen an Laborgeräte zum Mischen und Rühren
(IEC 61010-2-051:2018)

This European Standard was approved by CENELEC on 2018-11-09. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 61010-2-051:2021 (E)**European foreword**

The text of document 66/642/CDV, future edition 4 of IEC 61010-2-051, prepared by IEC/TC 66 "Safety of measuring, control and laboratory equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61010-2-051:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-08-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-08-02

This document supersedes EN 61010-2-051:2015 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For the relationship with EU Directive(s) / Regulation(s), see informative Annex ZZ, which is an integral part of EN IEC 61010-2-051:2021/A11:2021.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

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Endorsement notice

The text of the International Standard IEC 61010-2-051:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61010-2-010	NOTE	Harmonized as EN IEC 61010-2-010
IEC 62061	NOTE	Harmonized as EN 62061
ISO 13849 (series)	NOTE	Harmonized as EN ISO 13849 (series)



IEC 61010-2-051

Edition 4.0 2018-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

GROUP SAFETY PUBLICATION
PUBLICATION GROUPEE DE SÉCURITÉ

**Safety requirements for electrical equipment for measurement, control, and laboratory use –
Part 2-051: Particular requirements for laboratory equipment for mixing and stirring**

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**Exigences de sécurité pour appareils électriques de mesurage, de régulation, et de laboratoire –
Partie 2-051: Exigences particulières pour appareils de laboratoire utilisés pour mélanger et agiter**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 19.080; 71.040.20

ISBN 978-2-8322-6061-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR
MEASUREMENT, CONTROL, AND LABORATORY USE –****Part 2-051: Particular requirements for laboratory
equipment for mixing and stirring**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61010-2-051 has been prepared by IEC technical committee 66: Safety of measuring, control and laboratory equipment.

It has the status of a group safety publication in accordance with IEC Guide 104.

This fourth edition cancels and replaces the third edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) adaptation of changes introduced by Amendment 1 of IEC 61010-1;
- b) added tolerance for stability of AC voltage test equipment to Clause 6;

- c) added required RISK assessment for equipment intended to be used with flammable, hazardous, or toxic fluids to Clause 17.

The text of this International Standard is based on the following documents:

CDV	Report on voting
66/642/CDV	66/667/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61010 series, under the general title: *Safety requirements for electrical equipment for measurement, control, and laboratory use*, may be found on the IEC website.

This Part 2-051 is intended to be used in conjunction with IEC 61010-1. It was established on the basis of the third edition (2010) and its Amendment 1 (2016).

This Part 2-051 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Particular requirements for laboratory equipment for mixing and stirring*.

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Where a particular subclause of Part 1 is not mentioned in this Part 2, that subclause applies as far as is reasonable. Where the part states "addition", "modification", "replacement" or "deletion", the relevant requirement, test specification, or note in Part 1 should be adapted accordingly.

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In this standard:

[82d0b10ef72d/sist-en-iec-61010-2-051-2021](https://standards.iteh.ai/catalog/standards/sist/6a31fb4e-46bc-4304-87f1-82d0b10ef72d/sist-en-iec-61010-2-051-2021)

- 1) the following print types are used:
 - requirements: in roman type;
 - NOTES: in small roman type;
 - *conformity and test: in italic type;*
 - terms used throughout this standard which have been defined in Clause 3: SMALL ROMAN CAPITALS;
- 2) subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101. Additional annexes are lettered starting from AA and additional list items are lettered from aa).

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

Part 2-051: Particular requirements for laboratory equipment for mixing and stirring

1 Scope and object

This clause of Part 1 is applicable except as follows:

1.1.1 Equipment included in scope

Replacement:

Replace the text, except the first paragraph, with the following new text:

This part of IEC 61010 is applicable to electrically operated laboratory equipment and its accessories for mechanical mixing and stirring, where mechanical energy influences the shape or size or homogeneity of materials and their accessories. Such devices can contain heating elements.

NOTE If all or part of the equipment falls within the scope of one or more other Part 2 standards of the IEC 61010 series as well as within the scope of this document, consideration is given to those other Part 2 standards. The standard for equipment which contains heating devices is IEC 61010-2-010.

2 Normative references

This clause of Part 1 is applicable.

3 Terms and definitions

This clause of Part 1 is applicable.

4 Tests

This clause of Part 1 is applicable.

5 Marking and documentation

This clause of Part 1 is applicable except as follows:

5.4.1 General

Addition:

Add, after item h), the following new item:

- aa) if a HAZARD could be caused by operating a mixer or stirrer intended for use as HAND-HELD EQUIPMENT, there shall be a warning statement to that effect.

5.4.4 Equipment operation

Addition:

Add after item j), the following new item:

- aa) instructions for fixing the stirring vessel if specified and sold as part of a mixing system, or if otherwise applicable.

Add a new paragraph after the list of items as follows:

The instructions shall warn against use of the equipment in hazardous atmospheres or with hazardous materials for which the equipment is not designed.

Replacement:

Replace the paragraph before the compliance statement with the following new text:

The user shall be made aware that the protection provided by the equipment can be impaired if the equipment is used with accessories not provided or recommended by the manufacturer, or used in a manner not specified by the manufacturer.

6 Protection against electric shock

This clause of Part 1 is applicable except as follows:

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6.8.3.1 The AC voltage test

Replacement: <https://standards.iteh.ai/catalog/standards/sist/6a31fb4e-46bc-4304-87f1-82d0b10ef72d/sist-en-iec-61010-2-051-2021>

Replace the first sentence with the following new sentence:

The voltage tester shall be capable of maintaining the test voltage throughout the test within $\pm 5\%$ of the specified value.

7 Protection against mechanical HAZARDS

This clause of Part 1 is applicable except as follows:

7.3.2 Exceptions

Replacement:

Replace, in item a), the words "for example drilling and mixing equipment" with the following:

for example stirrer shafts and impellers extending downwards into material being stirred

Addition:

Add the following new subclauses:

7.3.101 Speed controls

If a SINGLE FAULT of an electronic speed control could cause a HAZARD, the equipment shall incorporate means to interrupt power or otherwise prevent the HAZARD.